

1. (Amended) A method for minimizing noise in an integrated circuit comprising:

choosing a net to be analyzed;

determining if the total path length of conductive paths coupled to a driver within
5 said net exceed a maximum acceptable length for that given driver according to a
minimum acceptable noise level for that given net, as determined by examination of a
noise amplitude versus length of conduction path curve associated with the driver; and

inserting at least one buffer within said net at a position which is within the
maximum acceptable length for conductive paths coupled to said driver, when the total
10 path length of conductive paths coupled to the driver exceeds a maximum acceptable
length for the driver according to a minimum acceptable noise level for that given net, as
determined by examination of the noise amplitude versus length of conduction path curve
associated with the driver.

15 2. (Amended) A computer readable media containing program instructions
that, when executed, exercise code for minimizing noise in an integrated circuit, the
computer readable media comprising:

program instructions for choosing a net to be analyzed;

program instructions for determining if the total path length of conductive paths
20 coupled to a driver within said net exceed a maximum acceptable length for that given
driver according to a minimum acceptable noise level for that given net, as determined by
examination of a noise amplitude versus length of conduction path curve associated with
the driver; and

program instructions for inserting at least one buffer within said net at a position
25 which is within the maximum acceptable length for conductive paths coupled to said

driver, when the total path length of conductive paths coupled to the driver exceeds a maximum acceptable length for the driver according to a minimum acceptable noise level for that given net, as determined by examination of the noise amplitude versus length of conduction path curve associated with the driver.

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3. (Amended) A method for minimizing noise in an integrated circuit comprising:

choosing a net to be analyzed;

10 determining if the total path length of conductive paths coupled to a first driver within said net exceed a maximum acceptable length for said first driver according to a minimum acceptable noise level for said net, as determined by examination of a noise amplitude versus length of conduction path curve associated with the driver;

determining if a second driver exists which provides a stronger signal output than said first driver and which also is available to replace said first driver;

15 replacing said first driver with said second driver;

determining, once said first driver is replaced, if the total path length of conductive paths coupled to said second driver within said net exceed a maximum acceptable length for said second driver according to a minimum acceptable noise level for said net, as determined by examination of a noise amplitude versus length of
20 conduction path curve associated with the second driver; and

inserting at least one buffer within said net at a position which is within the maximum acceptable length for conductive paths coupled to said driver, when the total path length of conductive paths coupled to the driver exceeds a maximum acceptable length for the driver according to a minimum acceptable noise level for that given net, as

determined by examination of the noise amplitude versus length of conduction path curve associated with the driver.

4. (Amended) A computer readable media containing program instructions
5 that, when executed, exercise code for minimizing noise in an integrated circuit, the computer readable media comprising:

program instructions for choosing a net to be analyzed;

program instructions for determining if the total path length of conductive paths
coupled to a first driver within said net exceed a maximum acceptable length for said first
10 driver according to a minimum acceptable noise level for said net, as determined by examination of a noise amplitude versus length of conduction path curve associated with the second driver;

program instructions for determining if a second driver exists which provides a
stronger signal output than said first driver and which also is available to replace said first
15 driver;

program instructions for replacing said first driver with said second driver;

program instructions for determining, once said first driver is replaced, if the total
path length of conductive paths coupled to said second driver within said net exceed a
maximum acceptable length for said second driver according to a minimum acceptable
20 noise level for said net, as determined by examination of a noise amplitude versus length of conduction path curve associated with the second driver; and

program instructions for inserting at least one buffer within said net at a position
which is within the maximum acceptable length for conductive paths coupled to said
driver, when the total path length of conductive paths coupled to the driver exceeds a
25 maximum acceptable length for the driver according to a minimum acceptable noise level

for that given net, as determined by examination of the noise amplitude versus length of conduction path curve associated with the driver.

5 5. The method for minimizing noise in an integrated circuit according to claim 1, wherein the curve defines a relationship between noise amplitude and conduction path length for the driver.

 6. The method for minimizing noise in an integrated circuit according to claim 5, wherein the curve defines a maximum allowable noise amplitude for the net.

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 7. (Amended) The method for minimizing noise in an integrated circuit according to claim 1, wherein the insertion of at least one buffer within the net occurs at a position within the maximum acceptable length for conductive paths coupled to the driver, as determined by examination of the curve associated with the driver.

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 8. The method for minimizing noise in an integrated circuit according to claim 7, wherein the curve associated with the driver defines a relationship between noise amplitude and conduction path length for the driver.

20 9. (Cancelled)

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12. (Cancelled)

13. (Cancelled)

5 14. The method for minimizing noise in an integrated circuit according to claim 1, wherein the determination of the total path length of conductive paths coupled to a driver within said net includes a plurality of intersecting conduction paths.

10 15. The method for minimizing noise in an integrated circuit according to claim 14, wherein an insertion position of at least one buffer along the plurality of conduction paths is chosen to yield a most acceptable integrated circuit timing characteristic.

15 16. The method for minimizing noise in an integrated circuit according to claim 3, wherein the curve defines a relationship between noise amplitude and conduction path length for the driver.

20 17. The method for minimizing noise in an integrated circuit according to claim 16, wherein the curve defines a maximum allowable noise amplitude for the net.

25 18. (Amended) The method for minimizing noise in an integrated circuit according to claim 3, wherein the insertion of at least one buffer within the net occurs at a position within the maximum acceptable length for conductive paths coupled to the driver, as determined by examination of the curve associated with the driver.

19. The method for minimizing noise in an integrated circuit according to claim 18, wherein the curve associated with the driver defines a relationship between noise amplitude and conduction path length for the driver.

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15 25. The method for minimizing noise in an integrated circuit according to claim 3, wherein the determination of the total path length of conductive paths coupled to a driver within said net includes a plurality of intersecting conduction paths.

20 26. The method for minimizing noise in an integrated circuit according to claim 25, wherein an insertion position of at least one buffer along the plurality of conduction paths is chosen to yield a most acceptable integrated circuit timing characteristic.

25 27. The computer readable media containing program instructions that, when executed, exercise code for minimizing noise in an integrated circuit according to claim

2, wherein the curve defines a relationship between noise amplitude and conduction path length for the driver.

28. The computer readable media containing program instructions that, when
5 executed, exercise code for minimizing noise in an integrated circuit according to claim 27, wherein the curve defines a maximum allowable noise amplitude for the net.

29. (Amended) The computer readable media containing program instructions
that, when executed, exercise code for minimizing noise in an integrated circuit according
10 to claim 2, wherein the insertion of at least one buffer within the net occurs at a position within the maximum acceptable length for conductive paths coupled to the driver, as determined by examination of the curve associated with the driver.

30. The computer readable media containing program instructions that, when
15 executed, exercise code for minimizing noise in an integrated circuit according to claim 29, wherein the curve associated with the driver defines a relationship between noise amplitude and conduction path length for the driver.

31. (Cancelled)
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32. (Cancelled)

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36. The computer readable media containing program instructions that, when
5 executed, exercise code for minimizing noise in an integrated circuit according to claim
2, wherein the determination of the total path length of conductive paths coupled to a
driver within said net includes a plurality of intersecting conduction paths.

37. The computer readable media containing program instructions that, when
10 executed, exercise code for minimizing noise in an integrated circuit according to claim
36, wherein an insertion position of at least one buffer along the plurality of conduction
paths is chosen to yield a most acceptable integrated circuit timing characteristic.

38. The computer readable media containing program instructions that, when
15 executed, exercise code for minimizing noise in an integrated circuit according to claim
4, wherein the curve defines a relationship between noise amplitude and conduction path
length for the driver.

39. The computer readable media containing program instructions that, when
20 executed, exercise code for minimizing noise in an integrated circuit according to claim
38, wherein the curve defines a maximum allowable noise amplitude for the net.

40. (Amended) The computer readable media containing program instructions
that, when executed, exercise code for minimizing noise in an integrated circuit according
25 to claim 4, wherein the insertion of at least one buffer within the net occurs at a position

within the maximum acceptable length for conductive paths coupled to the driver, as determined by examination of the curve associated with the driver.

41. The computer readable media containing program instructions that, when
5 executed, exercise code for minimizing noise in an integrated circuit according to claim
40, wherein the curve associated with the driver defines a relationship between noise
amplitude and conduction path length for the driver.

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46. (Cancelled)

47. The computer readable media containing program instructions that, when
20 executed, exercise code for minimizing noise in an integrated circuit according to claim
4, wherein the determination of the total path length of conductive paths coupled to a
driver within said net includes a plurality of intersecting conduction paths.

48. The computer readable media containing program instructions that, when
25 executed, exercise code for minimizing noise in an integrated circuit according to claim